

What is claimed is:

1 1. A broadcasting apparatus that broadcasts broadcast
2 programs, each of which is to be reproduced by a receiving
3 apparatus in a reproduction time period between a reproduction
4 starting time and a reproduction finishing time, the
5 broadcasting apparatus comprising:

6 scheduling means for generating a schedule for
7 transmitting the broadcast programs, the schedule including a
8 transmission starting time and a transmission finishing time
9 for each broadcast program; and

10 transmission means for transmitting each broadcast
11 program only in the time period between the transmission
12 starting time and the transmission finishing time according to
13 the schedule,

14 wherein the scheduling means generates the schedule so
15 that (a) as for a specific program among the broadcast programs,
16 a transmission starting time is set at a time a predetermined
17 amount of time before the reproduction starting time of the
18 specific program and a transmission finishing time is set at
19 the reproduction starting time of the specific program, and (b)
20 as for a broadcast program other than the specific program, a
21 transmission starting time is set at the reproduction starting
22 time of the broadcast program and a transmission finishing time
23 is set at the reproduction finishing time of the broadcast
24 program.

1 2. The broadcasting apparatus of Claim 1,

2 wherein the predetermined amount of time in the schedule
3 generated by the scheduling means is a time period necessary
4 for transmitting the specific program at least once.

1 3. The broadcasting apparatus of Claim 2,
2 wherein the scheduling means includes generation means
3 for generating (a) first messages which designate the receiving
4 apparatus to store the specific program in a storing unit within
5 the receiving apparatus and (b) a second message which
6 designates the receiving apparatus to reproduce the specific
7 program stored in the storing unit, and
8 the transmission means transmits (a) the first messages
9 for a duration from the transmission starting time to the
10 transmission finishing time of the specific program, and (b)
11 the second message in the reproduction time period of the
12 specific program.

1 4. The broadcasting apparatus of Claim 1,
2 wherein the scheduling means includes generation means
3 for generating (a) first messages which designate the receiving
4 apparatus to store the specific program in a storing unit within
5 the receiving apparatus and (b) a second message which
6 designates the receiving apparatus to reproduce the specific
7 program stored in the storing unit, and
8 the transmission means transmits (a) the first messages
9 for a duration from the transmission starting time to the
10 transmission finishing time of the specific program, and (b)

11 the second message in the reproduction time period of the
12 specific program.

1 5. A method for broadcasting broadcast programs, each of
2 which is to be reproduced by a receiving apparatus in a
3 reproduction time period between a reproduction starting time
4 and a reproduction finishing time, the method comprising the
5 steps of:

6 a scheduling step for generating a schedule for
7 transmitting the broadcast programs, the schedule including a
8 transmission starting time and a transmission finishing time
9 for each broadcast program; and

10 a transmission step for transmitting each broadcast
11 program only in the time period between the transmission
12 starting time and the transmission finishing time according to
13 the schedule,

14 wherein in the scheduling step the schedule is generated
15 so that (a) as for a specific program among the broadcast
16 programs, a transmission starting time is set at a time a
17 predetermined amount of time before the reproduction starting
18 time of the specific program and a transmission finishing time
19 is set at the reproduction starting time of the specific program,
20 and (b) as for a broadcast program other than the specific
21 program, a transmission starting time is set at the reproduction
22 starting time of the broadcast program and a transmission
23 finishing time is set at the reproduction finishing time of the
24 broadcast program.

1 6. The method of Claim 5,
2 wherein the predetermined amount of time in the schedule
3 generated in the scheduling step is a time period necessary for
4 transmitting the specific program at least once.

1 7. The method of Claim 6,
2 wherein, in the scheduling step, (a) first messages which
3 designate the receiving apparatus to store the specific program
4 in a storing unit within the receiving apparatus and (b) a second
5 message which designates the receiving apparatus to reproduce
6 the specific program stored in the storing unit are generated,
7 and
8 in the transmission step, (a) the first messages are
9 transmitted for a duration from the transmission starting time
10 to the transmission finishing time of the specific program, and
11 (b) the second message is transmitted in the reproduction time
12 period of the specific program.

1 8. The method of Claim 5,
2 wherein, in the scheduling step, (a) first messages which
3 designate the receiving apparatus to store the specific program
4 in a storing unit within the receiving apparatus and (b) a second
5 message which designates the receiving apparatus to reproduce
6 the specific program stored in the storing unit are generated,
7 and
8 in the transmission step, (a) the first messages are

9 transmitted for a duration from the transmission starting time
10 to the transmission finishing time of the specific program, and
11 (b) the second message is transmitted in the reproduction time
12 period of the specific program.

1 9. A program recording medium which is readable for a
2 computer in a broadcasting apparatus, the broadcasting
3 apparatus broadcasts broadcast programs, each of which is to
4 be reproduced by a receiving apparatus in a reproduction time
5 period between a reproduction starting time and a reproduction
6 finishing time, a computer program embodied on the program
7 recording medium has the computer conduct the steps of:

8 a scheduling step for generating a schedule for
9 transmitting the broadcast programs, the schedule including a
10 transmission starting time and a transmission finishing time
11 for each broadcast program; and

12 a transmission step for transmitting each broadcast
13 program only in the time period between the transmission
14 starting time and the transmission finishing time according to
15 the schedule,

16 wherein in the scheduling step the schedule is generated
17 so that (a) as for a specific program among the broadcast
18 programs, a transmission starting time is set at a time a
19 predetermined amount of time before the reproduction starting
20 time of the specific program and a transmission finishing time
21 is set at the reproduction starting time of the specific program,
22 and (b) as for a broadcast program other than the specific

23 program, a transmission starting time is set at the reproduction
24 starting time of the broadcast program and a transmission
25 finishing time is set at the reproduction finishing time of the
26 broadcast program.

1 10. A program that is executed by a computer in a broadcasting
2 apparatus, the broadcasting apparatus broadcasts broadcast
3 programs, each of which is to be reproduced by a receiving
4 apparatus in a reproduction time period between a reproduction
5 starting time and a reproduction finishing time, the program
6 has the computer conduct the steps of:

7 a scheduling step for generating a schedule for
8 transmitting the broadcast programs, the schedule including a
9 transmission starting time and a transmission finishing time
10 for each broadcast program; and

11 a transmission step for transmitting each broadcast
12 program only in the time period between the transmission
13 starting time and the transmission finishing time according to
14 the schedule,

15 wherein in the scheduling step the schedule is generated
16 so that (a) as for a specific program among the broadcast
17 programs, a transmission starting time is set at a time a
18 predetermined amount of time before the reproduction starting
19 time of the specific program and a transmission finishing time
20 is set at the reproduction starting time of the specific program,
21 and (b) as for a broadcast program other than the specific
22 program, a transmission starting time is set at the reproduction

23 starting time of the broadcast program and a transmission
24 finishing time is set at the reproduction finishing time of the
25 broadcast program.